

Appendix IV

60439376 .011003

P03170US/WARF-0204

ANTTACTAGATTAAAAAATACATTTTGGATCTGAAAGATATATTGTTGATTGGATATATTA
 TGGAAAAAATTAATAGACGTGGATTTTATTCATTCANAAAGAAATGACATATATAAAGATTAA
 AAAAATAAAGAGACAGGCTGTGTAGTTCACAGGUTATAGTGTGCAAGGTGGTGAAGGAGTAAAT
 TAGACCAAAAGATGAGTAGAAGGATTTTAGATCAAGATGATGGAGGGTATTTTAGATCTTTTC
 5 ATGTGATCCAGGGTATTTTGGCCGAGTTTATTGATTCTCCCTCTCTTTTGGTCTGGTGATTGA
 CAGGCGTCGCTAATGAGTGTTTGTTCATAGATATTATTTACTCTCAAGGTAATATATATTCCAAA
 AATTTTGTGCTACCAATATAATTTTCTTAAATATCTCGAGAGTACTATATACATTTTACTGT
 GTATCATTTTATAATAAAATATAAATTAGATGAAATTTACTTCTAGTAAATGTCACAGGT
 GTAGAGATTTCAAGTGAAGAGGTTTATTAATTTTCACTTTTATGCTATATATTTTAAAGTGACGAC
 10 TTTTATAAAAAAGATAATAAATATATGATAATTTTATAATCAATGGCTTTATATGATGA
 AAGAGAGAGAAATTAGATGACACCAATGTCCAAATTAATCTTAAAGAAATATGATTATATATAA
 ATTAATTTTAAATTTGATGAAAAATAGAGAGAGAGAGATGATGATGAGTAAATATGTTGGTGGG
 GTCCATGTGACATATAAACAATTTCTTATATATCTCTTATATATGATGATAAAGAAATATAT
 ATATATATATATTTCTTTTACAAATTTGGAATAGAGAAAGGAAATGGGTAGCAATTAAGAT
 15 GGAATCAAACTTTATCAACAAGTGTGAGATTCAGTAATCAACTTTATCATATCGAATACTTCCTCC
 GCTTTGAGTTCTTCTTTATGGNCCCG

SEQ ID NO:5: Gene 2 protein sequence (from the resistant homolog)

MRAEATQVLLDNLSTFLKRELVLVLPQDEPQLSSMFSTIQAVLEDAQEKQINRFLFLENVLRQLNAA
 20 EVDDLVLYKTKATIRFQSEGTGRIPEVIFPRHVKGRDQVNMKKAIAEDERKFLHKEKIVERQVRR
 ETGSLVTEPOVYGRDKEDEIVKILINVDQHLNLSVLPILGMGLGKTLIAQVFNQVQVTRHHSKIN
 ICVSEDFEKLKAIKAVSEIDGPPILGMDLAPLCKQLQELLNGKRYLLVDVWNEDQGWMLRVLK
 VAGSASVLTTRLRKVGSIHGTLPYELSHLSQEDCWLPMQRAPGHQEEINENLVAIGKIVKSGV
 25 PLAAKTLGGILCFKREERAEHVRDPIWNLPQDESSILPALRLSYHQLPLDLKQCFAVCVFPKDAHK
 REKLISLMAHGLFLSKGNMELDVGDEWRELYRSFPCEIEVKDGTTFPMHIDILHATSLFSANTS
 SNNIKELHKSIVTBMELGPAVVFETPLPELRKLSKLVNLQDCTNPKLSEIGDLVHLRYNLVYGS
 MRSLLPKQLCKLQNLQTLDLQYCTKLCCLPKETSKLGSRLNLLDGSGLTOMPPYGLSLCTKLQGFV
 30 GRKKGYLQGLGELNINLYGSIKISHLRVRVNMMAKFAKLSKCNLHSLMSWNRFGPIIYSEKVKLEA
 LKPHSNLTSKLYGFRGIHLPEMWNHVLKNIVSILISFRNRCSCLPFGDLPLESLELHWGSADVEVY
 BEVDIVHSGFPTRIRFPLRLKLDIWDGSLGKLLKKEGEQFVLEEMIIEHCEPLTSLSNRLAITS
 ICYNKVAATFPEEMFNLNLIKYLITSRCHNLKELPSTLSLNLAKLSKILQCLALESLEPEGLGSL
 35 TELFVECHMLKCLFGLQHLTYLTLKIRGCPQLIKRCEIGIDSWKHSHIPNVNVI

SEQ ID NO:6: Nucleic acid sequence of disease resistant gene, gene 3 (from the resistant homolog)

ATGGCTGAAGCTTCTCTCAAGTTCGCTAGATTAATCTCACTTTTTCATCAACGGGAACCTGGATTGG
 5 TTTTGGTTTCGAGAAGGAGTTTANAAACTTCAAGTATGTTTTCATGATCCACAGCTGCTAGAGA
 TGCTCAGAGAAAGCACTCGAAGTACAAGGCAATAAAGAACTGGTTACAGAACTCAATGTGCTGATAT
 10 TAGGTGTGATGATCTTGGATCTCACTGTAAACTGAGGCAGCAHAGTTCAAGCAGCGTATTTGGGCGCT
 ATCACTCAGGAGTACATCTTCTCTTCAAGGTGGAATAAGATGAGAAATGAGAAATGAGAAATGAG
 TGCATTCAGAGGACCGAGGAATTTTCAATTTAGATGAAAGATTTATAGAGAGCAACCTAGACGCG
 CAAACAGGTTTGTTTAATGAGCCAAAGATTTATGGAAGGAAAGAGGAGGATGAGATAGTGA
 15 TCTTGATTAACCAATGTTAGTTATTCGAAAGAGTTCCAGTACTCCCAATCTTGTATCGGGGACAT
 AAGAGCAGCTCTAGCCCAATGCTCTCAATGATCAAGAAATTTACGAGCATTTCAATCTAAGATATG
 CTTTGCTGCTCAGATGATTTTGATGAGAAGAGGTTGATTAGGCAATGTAGATCTATTGAAGGAAAGT
 20 CACTGGGTGACAGGATTCGCTCCCTCAGAGTAAGCTCAGAGGTGTTGATGAGAGAGATACCT
 TCTTGTGTTGATGATGTTTGGATGAGAGTCAAGAAAGTGGGATTAATCTACAGAGATGATTGAGAT
 25 GGGAGTATGTTGGTCTCAATTCTAATTAATCACTCGTCTTGAAAAATTTGGATCAATATGAGGACTTGC
 AACTATATCAGTTATCAAAATTTGCTCAGAGAGATTTGTTGTTGTTGTTCAAGCAACGTGCATTTTGCCA
 CCAAAACGAAACAGTCTTAACTTATGGAATTCGAAAGGAGATTTGAAAGAAATCTGGGGGTGTGCTC
 30 CTAGCAGCAAACTCTTGGAGGCTTTTACGCTTCAAGAGGGAAGAGAGTGAATGGGACATGTGAGAG
 ATAGTGAGATTTGGATTTTACCTCAGATGGAATCTGTTTGTGCTGCTCGAGGCTGAGTATCATCA
 35 TCTCCACTGATTGATGASACATGTTTGCATATTCGCAATTTCCAAAGAGCAACAAATGAGAAAG
 GATATATCATCGCTCTGCTGATGGACACAGTATTTCTTTATCAAAGGAACATGAGCTAGAGATG